

LOS ANGELES AMATEUR RADIO CLUB 40/S9

MAY 2016



www.losangelesarc.org

Monthly Meeting

The Los Angeles Amateur Radio Club will meet May 1, 2016. Club meetings are held at the Audrey & Sydney Irmas Youth Activity Center located at 11911 Vermont Ave., in Los Angeles Ca. 90044. This is on 120th and Vermont across from the Ralphs Market parking lot.

Club Net

The LAARC holds a radio net on 144.430 FM simplex at 8 PM pacific time every Saturday nite.

Tip of the Month

If it's quiet on the bands it's because you are not talking. Calling (CQCQCQ, this is "your call") usually gets the conversation started.

Club Officers

L.A.A.R.C. Officers

Stan Thornton	W6SMT	President
Doug Long	N6PZK	Vice-President
Jess Craig	W6CKC	Secretary
Laverne Carter	KJ6OSV	Secretary
Archie Buchanan	KD6OLH	Treasurer
Peter V. Swearingen	KJ6JQA	Sgt at Arms

Health and Welfare

None Reported

Club News

You can find a copy of the ARRL 2016 Field Day rules on the club website under Techtalk.

We did get a few club members setup on their Yaesu Wires-x systems. They will let other members know if and when their systems will be open to the public.

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FCC Invites Comments on Petition to Eliminate 15 dB Gain Limit on Amateur Amplifiers

The FCC has put on public notice and invited comments on a *Petition for Rule Making (RM-11767)*, filed on behalf of an amateur amplifier distributor, which seeks to revise the Amateur Service rules regarding maximum permissible amplifier gain. **Expert Linears America LLC** of Magnolia, Texas, which distributes linears manufactured by SPE in Italy, wants the FCC to eliminate the 15 dB gain limitation on amateur amplifiers, spelled out in §97.317(a)(2). Expert asserts that there should be no gain limitation at all on amplifiers sold or used in the Amateur Service.

“There is no technical or regulatory reason [that] an amplifier capable of being driven to full legal output by even a fraction of a watt should not be available to Amateur Radio operators in the United States,” Expert said in its *Petition*.

Expert maintains that the 15 dB gain limitation is an unneeded holdover from the days when amplifiers were less efficient and the FCC was attempting to rein in the use of Amateur Service amplifiers by Citizens Band operators. While the FCC proposed in

its 2004 *Notice of Proposed Rulemaking and Order* in WT Docket 04-140 to delete the requirement that amplifiers be designed to use a *minimum* of 50 W of drive power and subsequently did so, it did not further discuss the 15 dB amplification limit in the subsequent **Report and Order** in the docket.

“Although no party advocated retention of the 15 dB limit, it remains in place today,” Expert pointed out in its filing. “In the intervening years, advancements in Amateur Radio transmitter technology have led to the availability of highly compact, sophisticated low-power transmitters that require more than 15 dB of amplification to achieve maximum legal power output. Therefore, Expert seeks to remove the 15 dB limit from §97.317 so that Amateur Radio manufacturers and distributors will not be forced to needlessly cripple their amplifiers for sale in the United States.”

Expert pointed to its Model 1.3K FA amplifier as an example of a linear “inherently capable of considerably more than 15 dB of amplification,” which would make it a suitable match for low-power transceivers now on the market having output power on the order of 10 W.

Source:ARRL

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Tytera changes product brand name to TYT

Tytera announced plans this week to change the brand name on their line of two way radios from *Tytera* to *TYT* next month.

According to an official spokesperson from Tytera, starting May 2016 the company will begin to replace the Tytera brand on their entire product line with the name TYT.

Products such as the MD-280, the extremely popular MD-380, the mobile TH-7800 and the new waterproof MD-390 digital radio will be re-branded as TYT. The new label will likely appear this summer as existing Tytera inventory is exhausted and products are replenished. New Tytera products due this summer will likely carry the TYT brand at launch.

2016 ARRL Field Day is June 25-26



To work as many stations as possible on any and all amateur bands (excluding the 60, 30, 17, and 12-meter bands) and to learn to

operate in abnormal situations in less than optimal conditions. Field Day is open to all amateurs in the areas covered by the ARRL/RAC Field Organizations and countries within IARU Region 2. DX stations residing in other regions may be contacted for credit, but are not eligible to submit entries.

Source: ARRL

Satellite launch of D-Star

Of the conditions are favorable, the Soyuz rocket (Flight VS14) will fly from French Guiana on board with the first D-Star Satellite, cubesat OUFTI-1.

The frequencies are:

D-STAR system:

mounted Frequency: 435 045 MHz

descent frequency: 145.950 MHz

CW Beacon:

descending frequency: 145.980 MHz

Today, there is no 100% compatible radios with D-Star satellite communication.

IC-9100 is designed for operation with an FM or satellite USB (Normal or Reverse). Although it is equipped with platinum D-Star, communication will be complicated, it will "juggle" between reception and transmission. In fact the D-Star platinum can operate on a single channel.

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ID-5100: it may issue in D-Star in the first VFO UHF and VHF receive the D-Star on the 2nd VFO. With the Doppler effect, we have to play with 2 VFOs simultaneously.

ID-51: Almost impossible. can not change the frequencies of VFOs simultaneously. Decoding D-Star works on a single channel.

Whatever the radio to be used, communication with the satellite is very sporty if you are alone. And what are the consequences of the Doppler effect on D-Star communication.

Source: Dstar-France.fr

(Repeat Article)

How to File a Amateur Radio Complaint with the FCC

Amateur radio complaints should be as specific as possible, citing dates, times, and frequencies on which alleged violations occurred. Complaints should also include a name and telephone number where the complainant can be reached for further details, if necessary. Please submit your complaints/concerns regarding amateur radio to the Commission's on-line complaint system. The appropriate form for your complaint can be found here:

https://esupport.fcc.gov/ccmsforms/form2000.action?form_type=2000F

Willful or Malicious Interference Complaints

Section 97.101(d) of the Commission's Rules prohibits amateur operators from willfully or maliciously interfering with or causing interference to any radio communication or signal. 47 C.F.R. § 97.101(d).

The **Spectrum Enforcement Division**, in conjunction with the **Regional and Field Offices**, is responsible for responding to complaints of willful and/or malicious interference (sometimes called ``jamming") among amateur radio service licensees. Amateur radio service licensees wishing to file complaints alleging willful and/or malicious interference to other amateur radio service operations should follow the complaint process discussed above. Parties desiring further information may call: 1-888-225-5322

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(Repeat Article)

New Amateur Extra Question Pool Puts Greater Emphasis on Digital, SDRs, Propagation:

The new Amateur Extra class license examination question pool, effective from July 1, 2016, through June 30, 2020, now is available at the National Conference of Volunteer Coordinators (NCVEC <http://www.ncvec.org/>) website. The latest revision contains a few minor corrections that had been released in a February 5 errata of the initial January 8 release.

Source: ARRL Newsletter

(Repeat Article)

FCC QUESTION POOL REVISED FOR JULY 1, 2016

The FCC question pool for Amateur Radio Extra license exams has been revised and will be effective for exams conducted on or after July 1, 2016. ARRL will produce new study materials in preparation for the new Extra exam.

Source: ARRL News Letter



Classes & VEC Testing

None scheduled

Ham Radio License Exam Practice

The ARRL has launched a new online resource that allows users to take randomly generated practice exams using questions from the actual examination question pool. **ARRL Exam Review for Ham Radio™** is *free*, and users do *not* need to be ARRL members. The only requirement is that users must first set up a site login (this is a different and separate login from your ARRL website user registration).

<http://arrlexamreview.appspot.com>

Free Amateur Radio Practice Testing is available on the Web

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Practice exams are for those people who would like to study for a new US amateur radio license class. The questions contained within are provided by the

Federal Communications Commission and are selected from the same sub-elements that would be used for an official license examination.

<http://www.qrz.com/hamtest/>

<http://www.eham.net/exams/>

<http://arrlexamreview.appspot.com>

Find and Exam in Your Area:

You can find an Amateur License Exam In your area at ARRL.ORG

<http://www.arrl.org/find-an-amateur-radio-license-exam-session/>

You can find an Amateur License Exam In your area at ARRL.ORG

http://www.arrl.org/exam_sessions/search

Electronics Refresher

Coaxial Cable Considerations

Some Coaxial Cable Considerations

Impedance: It is very important to select coaxial cable with a characteristic impedance that matches your transmitter output and your antenna feed point impedance. For VHF/UHF commercial antennas you are virtually guaranteed to have something close to a 50 ohm feed point as long as you keep the antenna away from other significant conductors in the environment by a wavelength or two. (You probably don't want to mount your vertical antenna right next to the vertical aluminum downspout on your house, for instance.) But virtually all VHF/UHF transmitters and antennas are designed for 50 ohm coaxial cable, and there are many varieties of 50-ohm coax to choose from. How do you know what to get?

Cable Type	Frequency (MHz)	Loss (dB / 100 ft.)
RG-8/U	50	1.2
	100	1.7
	200	2.6
	400	3.9
RG-58/U	50	2.5
	100	3.8
	200	5.6
	400	8.4

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Feed Line Loss: One of the chief factors to consider in selecting coax is its loss figures. As signals travel along the conductors they will be attenuated. Higher frequency signals will have more loss in the transmission line than lower frequency signals, and different designs of coax cable will impose different magnitudes of loss overall. It is easy to compare loss figures among various coaxial cables – most distributors or manufacturers will publish the cable's loss figures for various frequencies. The most common comparison metric is loss in decibels per 100 feet of cable, like the table here.

Notice that for RG-58/U type cable at 100 MHz (close to the 2m band frequency range) the loss for 100 feet of transmission line is 3.8 dB. That means that at the antenna feed point your transmitter's signal power will be less than one-half its indicated value on your transmitter (3 dB = 2X).

Generally, lower loss cable types are more expensive than higher loss – you get what you pay for. But if you have a short run of only a couple dozen feet to reach your antenna, the loss may not be that significant and you can save your money. If you have a longer run, more than 50 feet, you may find it advantageous to pay a little more and preserve your effective signal strength at the antenna.

Further, you should also consider the gain of the antenna you select along with the loss imposed by the coax. While the comparison or compensation of antenna gain for feed

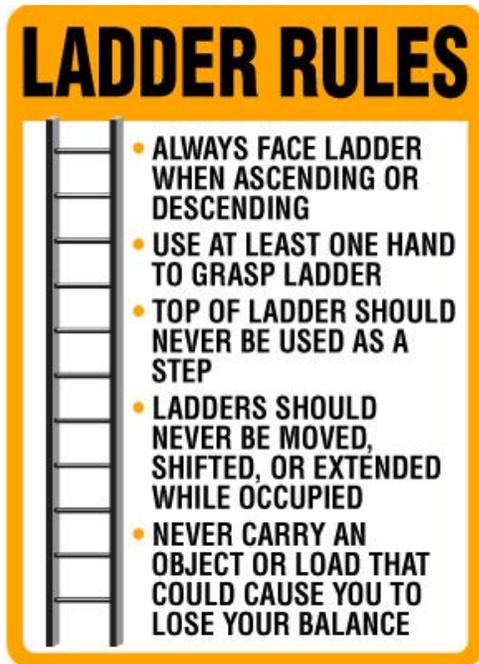
line loss isn't necessarily an apples-to-apples situation, you can get a general idea of the combined effects of pairing various cables/lengths and antennas when scheming on your antenna system design.

Coaxial Cable Gauge: How and where you need to route your antenna coaxial cable and the length of run necessary may impact your selection of a coaxial cable gauge, or diameter. Narrow gauge coax such as RG-58 or RG-174 is low profile and quite flexible. It requires smaller holes and it fits corners. However, as noted in the table above, narrow gauge cables tend to impose higher signal losses. Larger gauge coax, such as RG-8, 9913, or LMR 400 is much more noticeable and is usually stiffer and somewhat more difficult to work with. However, the larger gauge cables tend to offer the lowest loss figures. Additionally, some of these larger diameter cables are produced in flexible varieties, such as Belden 9913F7. It combines very admirable loss figures with high flexibility for ease of routing, but it is limited in its power handling capacity to about 300 watts. Still, for most VHF/UHF FM operations this capacity is much more than adequate. Consider the coaxial cable routing for your potential antenna locations and identify the best combination of cable type for location, routing, and loss.

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Safety



Ladder Injury Statistics

A Consumer Product Safety Commission (CPSC) report on ladder safety showed some startling statistics concerning the frequency and severity of ladder-related accidents in the United States. Every year thousands of people are injured and hundreds are killed. By understanding the causes of ladder accidents the vast majority could be prevented.

- More than **90,000 people receive emergency room treatment** from ladder-related injuries every year

- Elevated falls account for almost **700 occupational deaths** annually
- These deaths account for 15% of all occupational deaths
- OSHA believes 100% of all ladder accidents could be prevented if proper attention to equipment and climber training were provided
- Over the last 10 years the amount of ladder-related injuries has increased 50%
- According the Bureau of Labor Statistics, 50% of all ladder-related **accidents were due to individuals carrying items as they climbed**

Source:

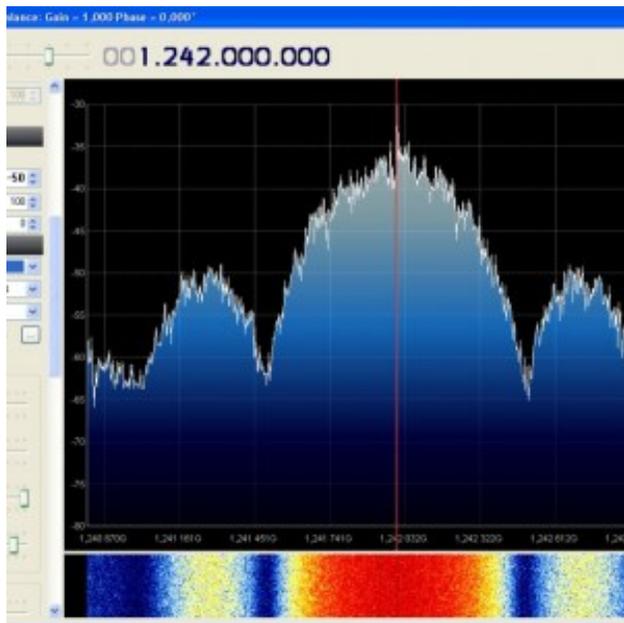
<http://www.cultureofsafety.com/safety-tips/ladder-safety/>

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Radio and Software Tech Talk

Transmitting DATV with Raspberry Pi



All the way back in April 2014 we first posted about how the Raspberry Pi was able to transmit FM by cleverly modulating one of it's GPIO pins. Later in October 2015 F5OEO expanded this idea and created software that allowed the Raspberry Pi to transmit not only FM, but also AM, SSB, SSTV and FSQ. Soon after some filter shields such as the [QRPi](#) were released to try and cut down on the spurious emissions caused by transmitting using this method.

Now F5OEO has once again taken this method a step forward and has created software capable of allowing the Raspberry Pi to transmit Digital Amateur TV (DATV). The software is called Rpidatv, and can be downloaded from <https://github.com/F5OEO/rpidatv>.

F5OEO writes that the software is capable of generating a symbol rate from 64k symbols to 1M symbols, which is enough to transmit one video with good H264 encoded quality.

Once again we remind you that if you intend to transmit using these methods where a GPIO pin is modulated, then you **MUST** use a bandpass filter at the frequency you are transmitting at, and that you must be licensed to transmit on those frequencies.

For Sale or SWAP

For Sale:

This space is reserved for anything amateur related you want to sale, swap trade, buy or get rid of. Send your list to K6FED@yahoo.com. Items are listed for one month. Additional time can be requested by email.